

First Issue K-Tech News

by Ken Ploeser, Editor-in-chief

You may remember the Hot Line News. But, now we call it "K-Tech News" because it will give you information on what's going on in all departments of Technical Services. There are a lot of things to talk about, so the folks in Technical Services, want to expand the line of communication. You must provide quality services to your customer and we need to work hard to support you.

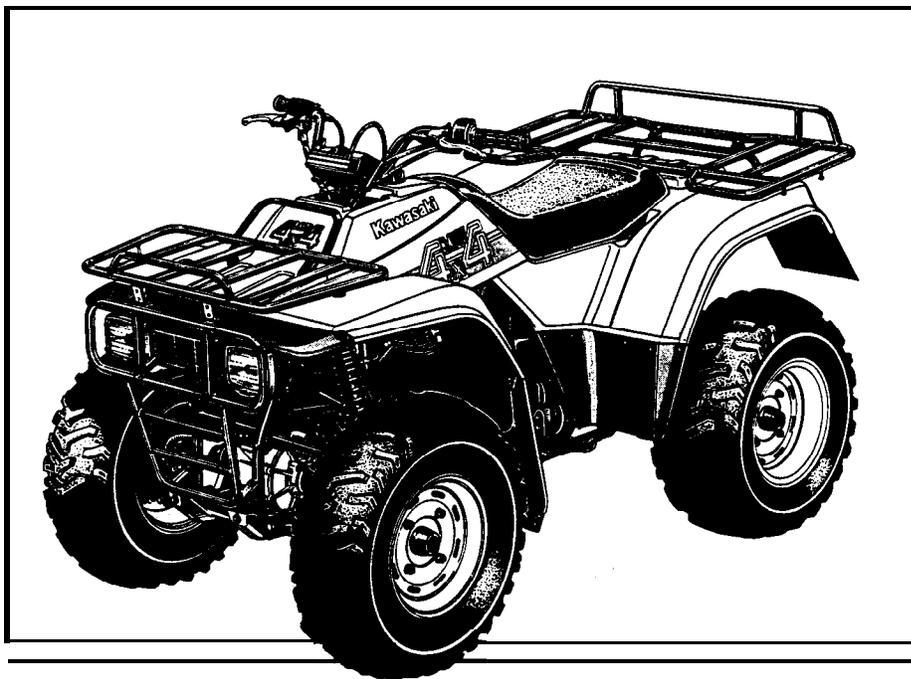
We will be including feature articles that focus on the operation of a profitable service business. Guest spots on those dealers who have made it happen. And, of course, letters we receive from you.

Shop Talk departments include technical information and explanations, special tool tips, parts news, service information, and more.

You'll hear the inside scoop from the Hot Line Specialists previewing new product information and keeping you up-to-date on the latest tricks.

You should file all K-Tech issues in your Service and Warranty Binder under the "Training" tab.

We encourage your input! If you have a service tip you would like to share or an article to contribute, send it in. You say yours is the top service department in your area? Tell us about it, you just might be in our next GUEST SPOT. Please send all your contributions to: K-Tech News, Kawasaki Motors Corp., U.S.A.



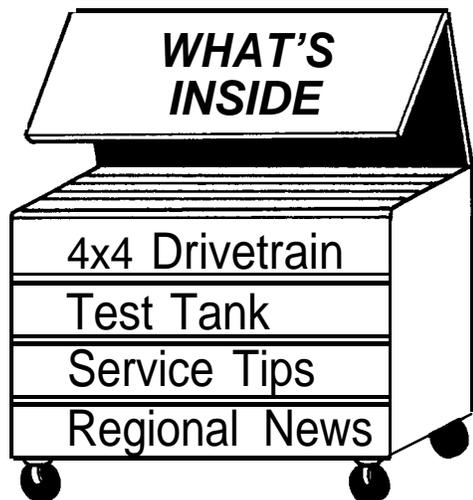
4x4

BAYOU

Introduction by Tim Bean, Program Developer

Kawasaki is proud to introduce the KLP300-C1 Bayou for 1989. The engine is based on our reliable KLF300B with changes made to the head, cams, and cab, extracting more low end torque for stump pulling power. Heavy duty adjustable independent suspension, powerful twin piston caliper front brakes and a dual range transmission make this 4x4 stand up to the toughest jobs around.

The drive train is a full-time four-wheel drive system with a trick limited slip differential up front. See the article on Page 2 of this issue for a detailed look at the four wheel drive system. And for a brief technical look at other new models for Kawasaki in '89, check out our 1989 Product Sales Guide. You will be surprised at what you'll find. n +

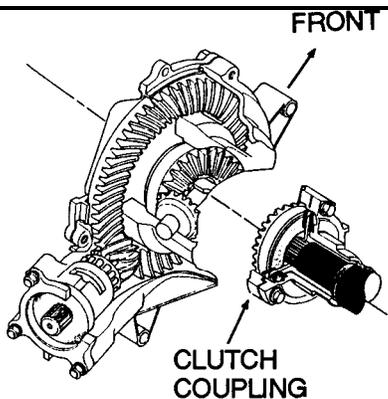
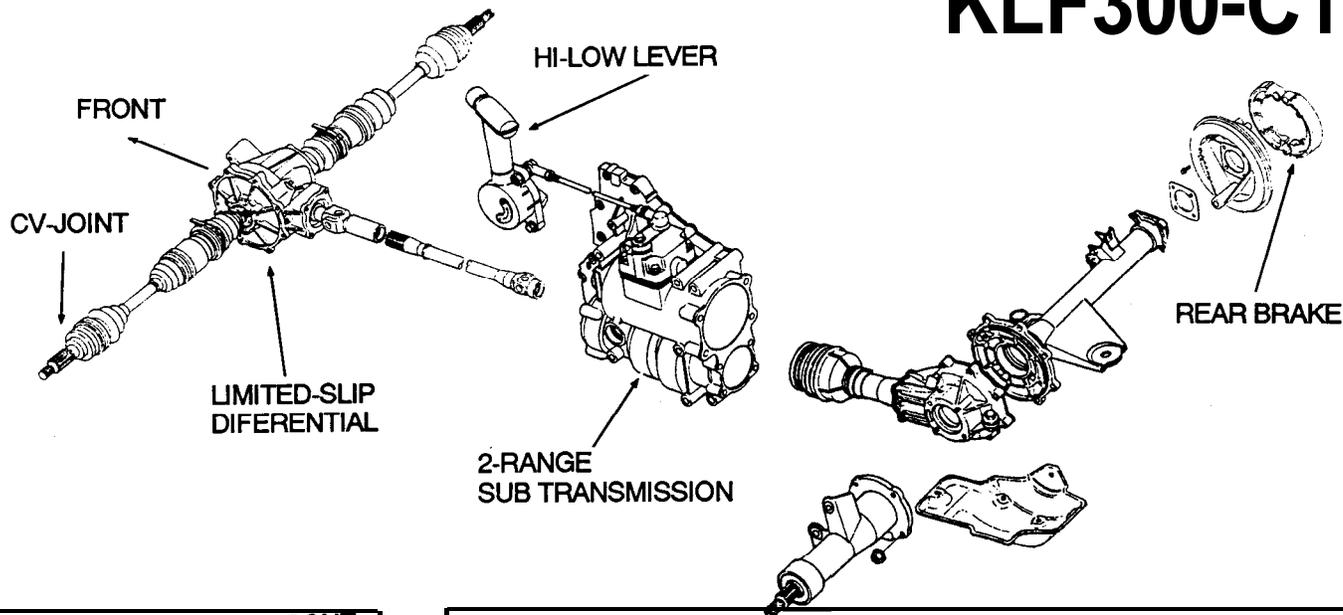


Specifications

ENGINE		CHASSIS	
Displacement	290 cc	Front Wheel Travel	4.3in.
Bore & Stroke	76.0 x 64.0 mm	Rear Wheel Travel	4.7 in.
Maximum Horsepower	.20 @ 6500 RPM	Wheelbase	47.2 in.
Maximum Torque	17.4 ft.-lb @ 5500 RPM	Front Tire Size	24/8-11
Compression Ratio	8.6:1	Rear Tire Size	24/10-11
Carburetor	CVK 32	Ground Clearance	8.9 in.
Engine Oil Capacity	2.3 Qts.	Minimum Turning Radius	9.5 ft.
Starting System	Electric & Recoil	Fuel Tank Capacity	2.9 gal.
Ignition System	TCBI w/ Electronic Advance	Final Drive	Shaft
Battery	12V/14AH	Track Front/Rear	33.2/33.1 in.
Maximum Charging Output	329 V/A	Dry Weight	567 lb.

NOTE: Specifications subject to change without notice.

KLF300-C1



Limited-Slip Differential

- Maximum Traction
- Full Torque

The special tools listed below are needed to do the following:

- Sub transmission disassembly and assembly.
- Front final gear case pinion gear removal and assembly.
- Front final gear case pinion gear preload measurement.

Four-Wheel Drive

by Jerry Heil, Program Developer

The new KLF300-C1 4x4 is here. It shares Kawasaki technology with the 2-wheel drive B2 model. But, of course, the big news is the full-time four-wheel drive. All wheels are driven by the two speed subtransmission that fits up to the left side of the transmission case. A stub shaft extends from the front and rear of the subtransmission.

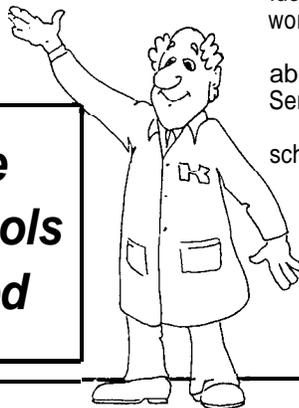
Each end of the splined stub shaft drives a front and rear driveshaft. The rear wheels are driven by the solid rear drive shaft via a bevel gear set. No differential is used on the rear axle of the 4x4. The front driveshaft connects to the limited slip differential. Right and left half shafts drive the front wheels through constant-velocity joints.

The limited slip front differential provides full traction during turning, while the steering effort at the handlebars is greatly reduced.

To extend engine life, the piston-to-cylinder clearances have been tightened up by enlarging the piston diameter and the top and second ring groove widths have been reduced. Other variations from the B2 model have helped broaden the power band. These changes include reshaping of the combustion chamber. Squish area is enlarged and angled up slightly. A smaller 12 mm NGK D8EA spark plug allows more metal in the valve seat area, increasing heat dissipation. A new cam profile reduces valve lift by about 0.2 mm on both intake and exhaust. Full ignition advance occurs 800 RPM sooner and is reduced 10 degrees to 30 @ 3200 RPM. The result is an engine that delivers stumppulling power over a wider RPM range. Even though peak power is reduced by less than one horsepower, the power starts at a lower RPM for more useable performance ideally suited for the nature of this 4x4 workhorse.

For further technical information about the KLF300-C1, refer to the Service Manual P/N 99924-1117-51.

Be sure to look on the training schedule for the upcoming ATV class.



Here's the special tools you'll need

Part No.	Part Name
57001-1281	Pinion Gear Holder
57001-1282	Socket Wrench
57001-1283	Socket Wrench
57001-1284	Hexagon Wrench (Hex)
57001-1285	Pinion Gear Holder

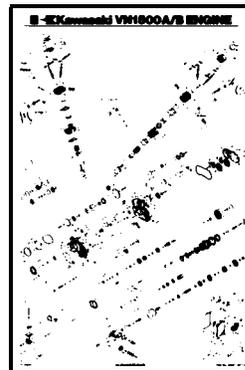
MICRO-

by "Micro" Mike Jeffers, Parts Publications

Do you realize that there is a lot of information besides part numbers included on each microfiche? General specifications, tuning information, and a library of reference material part numbers concerning each model are but a few of the features. Also included is a parts number index which lists every part number for the specified model. Bulletins or any special gasket kits that may effect the product are included in a specific section at the bottom of the fiche. Reproductions of service bulletins are added during each update of the microfiche. Taking time to use the microfiche fully will save you time in the long run.

Beginning with 1988 models, Kawasaki street-legal vehicle parts microfiche include decal part numbers. Prior to 1988 the decal part numbers can be found on Parts bulletin MC 86-02.

Kawasaki has microfiche decks and subscriptions especially designed for your needs. If you have any suggestions regarding microfiche, call "Micro" Mike Jeffers, Kawasaki Service Training and Communications Department at (714) 770-0400 ext. 2573.



NEW

Vulcan 88 exploded view engine parts poster is now available. Order it from the Kawasaki Technical Services Department. Take a look at Service Bulletin TR88-01 to see all the posters available.

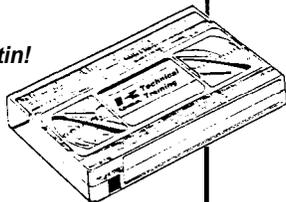
BULLETINS

by Ray St. John, Technical Writer

You guys make a difference! "How can I help," you say? Well, Jeff Arruda from Clark Kawasaki of Orange, California, informed us of a problem he discovered while doing the A & P on a 1988 EX250-F2L. He questioned the location of the evap hoses on the fuel tank. Sure enough, the hoses were mislocated and so were the color-coded stickers on the tank.

The result:

MC88-01 Recall bulletin!
Thanks Jeff. Good



VIDEOS

V-TWIN FAMILIARIZATION (See Service Bulletin TR88-02) This 35-minute video explains service and design features unique to the 700-750 cc V-Twin.

JET SKI® WATERCRAFT (See Service Bulletin TR88-02) This one-hour video on JET SKI® watercraft maintenance covers technical features along with general maintenance and inspection procedures on the JS550A, JS300B, and JF650A models.

ZX750-R NINJA (See Service Bulletin TR88-02) Kawasaki has developed this 18-minute video tape highlighting engine removal and disassembly with helpful hints that will reduce service time.

BONUS!

As an added bonus, you will receive a FREE video reference manual with each tape order as a quick-reference guide when working in the shop. To order: call Ray at (714)770-0400 ext. 2466.

RECAP 1988-FDM/FAR/RECALL

Bulletin

Number Model

Description

MC88-01 EX250-F2L

Vacuum Hose Routing—

The color coded adhesive decals on the gas tanks of 1988 California emissions equipped EX250-F2L models are incorrectly placed.

MC88-06 ZX1000-B1/L,B2/L

Rear Wheel Hub Damper—

On eligible units, the rear wheel hub damper may slip out of position and become damaged during hard acceleration, allowing excessive movement between the hub coupling (sprocket carrier) and the rear wheel hub.

MC88-07 ZX1000-A1/L,A2/L

Accessory Backrest Recall—

The eligible backrest is not as strong as it was intended to be. If the backrest breaks, the passenger could fall off the motorcycle and be injured.

Kawasaki has initiated this recall campaign to remove the eligible backrests from the market and from customers' motorcycles.

UV88-01 KAF450-B1

Cargo Bed Handgrips—

Handgrips have been added to the KAF450-B1 cargo bed to make it easier to tilt up and down.

PG88-01 GD700-A1/AS1

Hard Startling—

Some eligible units may have an incorrectly wound generator stator coil. This results in hard starting.

TECHNICAL TRAINING MANUALS

Kawasaki is making available manuals used in product support training courses. They were created specifically for technical instruction and contain a wealth of information not found in any other publication. Each manual is richly illustrated and covers the subject matter with simple, concise explanations. This material is easily understood by all skill levels. To order, refer to Service Bulletin TR86-03, or contact: Technical Training (714)770-0400 ext. 2466.



- Electrical Fundamentals
- JET SKI Watercraft Video Reference
- High Performance Engines
- ZX900 Engine Series Familiarization
- V-Twin Engine Familiarization
- 750 Turbo
- Police Motorcycle Maintenance

LETTERS

City of North Las Vegas
Police Department
Las Vegas, Nevada

Dear Sirs:

In December, 1987, this Department purchased eight KZ1000 Police motorcycles from a local dealership, Kawasaki of Las Vegas. Since that time, we have experienced some minor problems that were not unexpected from brand new equipment.

The point of this letter is not to dwell on the problems, but rather to comment on the service provided by Kawasaki of Las Vegas. Whenever a motorcycle was taken to the dealership, we received prompt, satisfactory service that we found refreshing. On some occasions, breakdowns occurred in the field. Kawasaki of Las Vegas immediately sent a service mechanic to the field and repaired the motorcycle on the spot. Their after-sale service is excellent. Everyone we have dealt with at the dealership, both in sales and service, was more than cooperative, fair and excellent representatives of the Kawasaki Motor Corporation.

All our experiences with Kawasaki of Las Vegas have been excellent. We hope this letter might commend the dealership for their professional attitude.

Sincerely,

J. L. Zohner
Chief of Police and Lt. K. Kiphart
Traffic Bureau Commander

Editor:

I don't think much of a comment is necessary. You get the point.

Tucson Kawasaki
5225 East 22nd Street
Tucson, Arizona 85711

Dear Sirs:

I am interested in receiving Kawasaki Hot Line News Publication regularly here at our new store. Please advise as to how I may subscribe.

Thank you.

Michael Hughes
Service Manager

Editor:

Mike, you can consider yourself a subscriber. "K-Tech News" is a quarterly magazine mailed automatically to all Kawasaki dealers at no charge. Just check your regular weekly mailing from Kawasaki.

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GUEST SPOT

by Don Church, Manager-
Service Training and Communications

In future issues, the guest spot will feature Kawasaki dealers who have developed innovative ways of promoting and operating their service departments. To get started, take a look at the following questions:

- Do you have an open house and offer free vehicle inspections?
- Do you make customer satisfaction follow up mailings?
- Do you offer discounts to club members?
- Do you do specialty work such as painting?
- Do you have a JET SKI® watercraft test tank?
- Do you "winterize" JET SKI® watercraft and even offer winter storage?

Some of you can answer "yes" to these questions, and some of you have other ideas that work well. The Guest Spot is here for you to share your formula for a successful (i.e., profitable) service department with other Kawasaki dealers. Oh, and for those who answered "no" to these questions, be sure to read Guest Spot in the next issue.

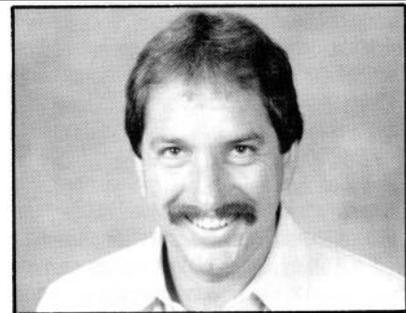
ROCKY MOUNTAIN KAWASAKI-

by Keith Pestotnik, R.M.K. Regional
Service Manager

Rocky Mountain Kawasaki, located in western Nebraska, is an independent distributor of Kawasaki products throughout the Rocky Mountain and high plains region. They first began purchasing Kawasaki motorcycles in 1964, two years before KMC was formed, and actually sold the first Kawasaki in the United States.

In addition to distributing Kawasaki products, their parent company, Masek Distributing, Inc., also distributes Mariner Outboard engines, several lines of quality boats, two golf car lines, and a host of other power products.

Rocky Mountain Kawasaki has established a widespread reputation for service excellence, particularly in dealing with problems relating to high altitude. Their marine experience dates back to the 1940s and they have done an excellent job assisting their dealers through the explosive growth of the JET SKI® watercraft line.



Keith Pestotnik

- Technical training for dealers
- Technical assistance to dealers
- Consumer Services
- Warranty Administration

Keith started his career with R.M.K. in 1984. His dealership experience involved managing service departments for different franchised brands. He always remained close to his toolbox, with a primary focus on Kawasaki products.

He can offer today's Kawasaki technician some very solid advice on a timely basis. RMK dealers can call Keith for advice and technical assistance at (308)436-5818.

“Service: 1990”

A Business: An entrepreneurial enterprise, which when well planned, will result in the viable pursuit of happiness, health and profit.

EVALUATE Your Service Business

by Ken Ploeser

“Service: 1990?” It’s only 1988! Did I miss something? Well, it’s quite possible. The 1989 models are here already and 1990 will be upon us before we know it. We all talk about planning, and now is the time to do it. If ever there was a good opportunity to get a handle on the service operation of your business, now is it.

Hold it! Wait a second, before you explode out of the starting blocks. The only way to really plan for the future is to get a clear picture of where you’ve been and where you are right now. So the question is, what is your service business? As you know, every business provides two things to the consumer; a product and a service.

Are you a tuneup shop, an overhaul shop, a body shop? Maybe you are a complaint department, or a junk restoration department. How does your service business fit into the overall business plan you projected? Do you run your service department like the rest of your business, or does it give you the business.

By evaluating the business activities you have engaged in year-to-date, you can develop a plan of action for your service department. Begin by pulling all the repair order hard copies for the last 90 days of business, including all sales jobs, parts and accessory internal work, and the jobs performed to support the service department itself.

Hopefully, you write a repair order for any and every job performed by service personnel.

Look at what types of jobs you are most frequently called upon to do. Make a list of those jobs which yield the most profit with the least hassle. This list is the beginning of your service menu, the services your business sells to customers.

So, that’s a start on the type of services you provide.

Next, and probably most important, is to get a handle on the product you’ve been selling through service. Take

inventory on your service product. “Physical inventory of what?” you say. Well, it may not actually be a physical inventory, but you should know precisely what you are selling. The wholesale cost versus the retail sales. We are talking about TIME. How many hours the store is open compared to the billable hours from service. Selling hours of labor. Yes, your service product is time.

From the Repair Orders you pulled up to identify your services, make a list of the total labor dollars sold. Compare this total to the technician payroll paid out in the same time period. If you divide the payroll (your wholesale cost of labor hours) by the total labor dollars billed out, you’ll have your percent labor cost per hour sold. This figure will not be more than 50% in a profitable service department.

$$\frac{\text{Labor Payroll}}{\text{Labor Dollars Sold}} = 50\% \text{ or less}$$

“I think I’m making progress.”



Now, compare the billable hours to the hours the service department is open and available to the customers, you’ll have the percent of billable labor hours. This figure is either a pleasant surprise or a major cause of heart failure! In either case, billable hours indicate volume of services that have been sold. It does not, however, indicate the amount of labor

hours out in the market that are rightfully yours to recover.

$$\frac{\text{Billable Hours}}{\text{Hours Open}} = ?$$

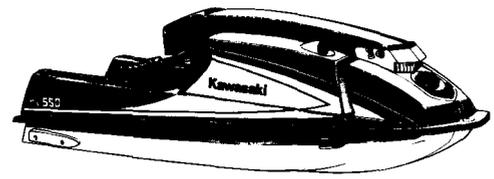
Billable hours: the key to a profitable service operation. Before you say you already do that, take a check on how well you are filling the service labor pipeline. You may keep good track of hours sold and collected by work order hard copies; you certainly know how much money is going toward service employees’ salaries; but, are you getting all the labor sales you should have coming to you? What percentage of new bikes sold return for service? Are they coming back far beyond the intervals recommended in the owner’s manual maintenance schedule? Do they come back only for the first service or never at all? Does your overall selling plan include selling your services?

Each unit you sell, new or used, carries with it the potential labor hour sales that you should recover. When a customer buys a unit, your service sales go with it. How many labor hours are not returning to your store? Realizing the potential sellable hours you could capture, will aid in planning service levels you can provide.

Taking a look at these three factors, labor cost, billable hours and first service-to-sales ratios, is the first step toward realizing the service profits you deserve. If you were not able to attend the Service Profit Seminar at the dealer show, be sure to see your District Manager or plan to attend the next Service Department Operations class for details.

Our next feature will focus on the details of the “K-BOSS” service business system. So, hold on tight while we grab a handful and Let the Good Times Roll!!!

Test Tank Update



by Ray St John, Technical Writer

Recently we've been seeing increased interest in building a Jet Skid watercraft test tank. Two articles have been run in two different Kawasaki publications and a number of dealers have built tanks. Their practical experiences showed us how we could change our tank design for the better. So we made some changes and here they are.

Basically, our tank is twelve feet long and about eight feet wide. Suggested dimensions are on the illustrations. You may want to increase dimensions to suit your own needs. It has a wall down the middle so the water will flow around the tank in a circle. If the water circulates around or under the boat, the pump will cavitate and lose thrust. The walls are strong enough to hold the weight of the water and absorb the jet pump's thrust.

We suggest that you build your test tank so that the bottom is below ground level about twelve to fourteen inches. This makes it easier to load the boat into it, and also gets the footings below the frost line. Of course you may have to adjust this depending on the frost line depth in your area.

The footings and slab bottom are of poured concrete strengthened with 3/8" re-bar or wire mesh. If you have a contractor doing this work, make sure and tell him what you're going to use it for. He'll know how much reinforcement to use. Also, be sure to put a 12"x12" footing under the center wall.

All the walls are 8"x8"x16" concrete blocks. Use 3/8" re-bar between each course of blocks and at the corners as shown to reinforce the concrete corner fillets. The walls can also be made of poured concrete. If so, they must be poured at the same time as the slab and footings, or the seam between the bottom and sides will be very hard to seal.

Set J-bolts in the side and center walls above the first and third courses. These will hold the baffle mount angle irons in place. Be sure the J-bolts are in a vertical line and directly across from each other. Set the eye bolts into the end walls above the fourth course, just at or above the waterline.

Build the walls about eight courses tall at the high end and five at the low end. When the walls are full height, slide a piece of re-bar into each hole so it goes all the way to the foundation. Fill the

holes with poured concrete. Be sure to do the center dividing wall, too.

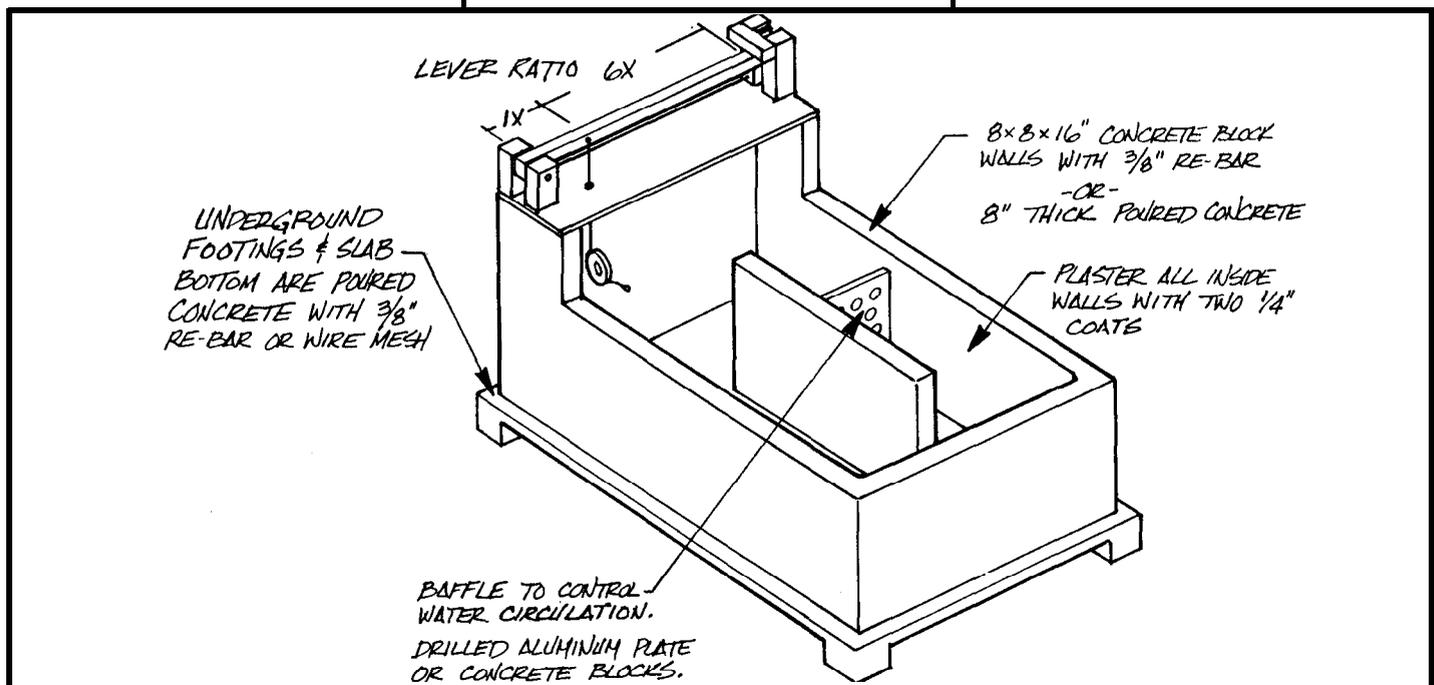
It's free standing so it needs all the help it can get.

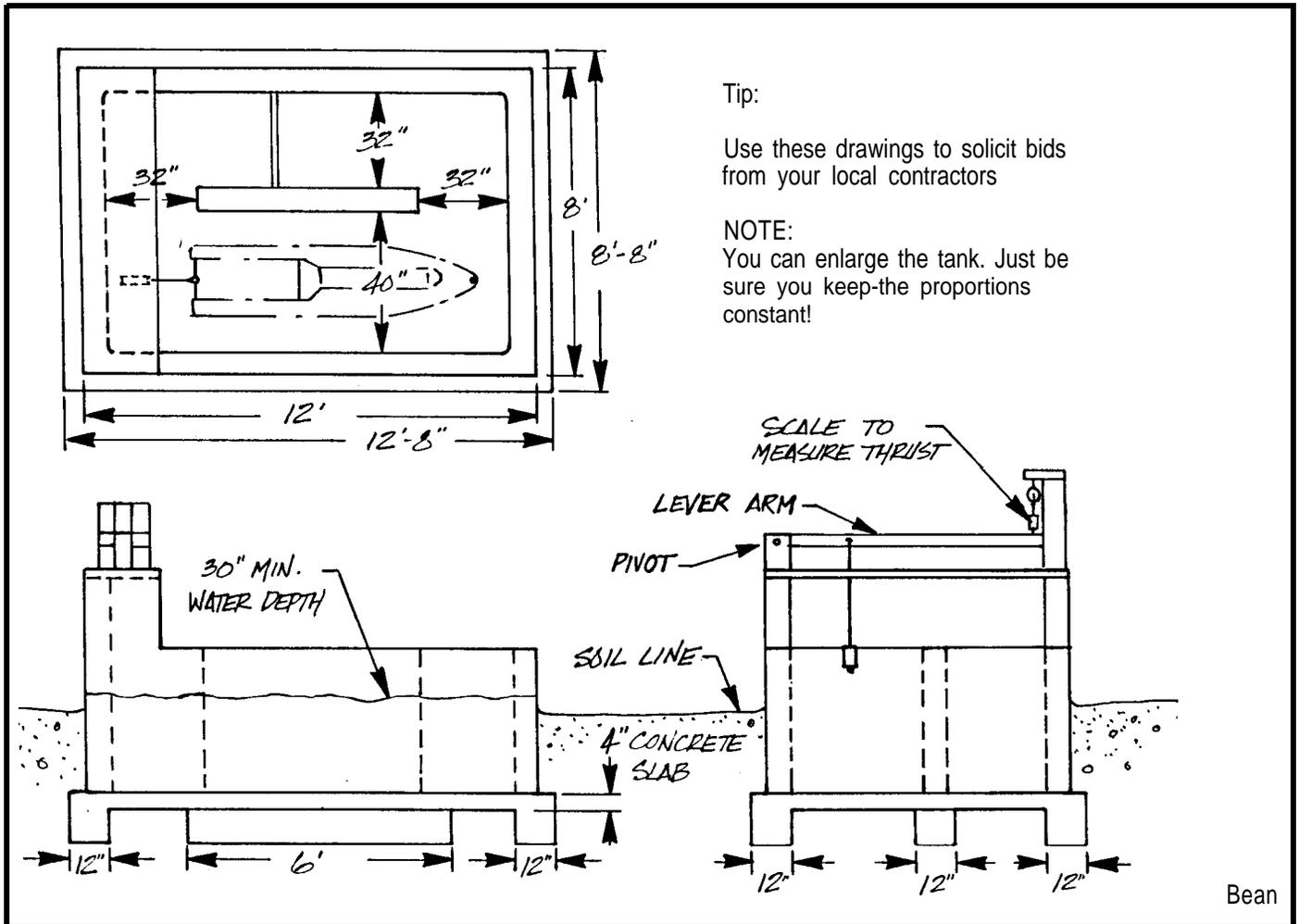
Cap the walls with mortar. Make it a little rounded.

Build forms in the corners of the tank and pour concrete into them for corner fillets. These smooth the water flow around the corners so the larger the tank, the larger they should be. The re-bar protruding across the corners holds them in place.

Plaster the inside of the tank and all around the center wall. Use two 1/4" coats for best results. This is similar to waterproofing a basement. So if you know something that works in your area to seal a basement, it'll probably work well here, too. Our design goes one step further by coating the inside with swimming pool sealant. Let the plaster cure **thoroughly** before applying the sealant. Clean the tank first, and then follow the sealant manufacturer's instructions to the letter.

Roof over the tall end of the tank to keep the water from splashing out. Brace it to withstand the expected snow load in your area.





Tip:

Use these drawings to solicit bids from your local contractors

NOTE:

You can enlarge the tank. Just be sure you keep the proportions constant!

Bean

Scales to measure the thrust are readily available. Check feed stores, agricultural implement supply houses; even bait and tackle shops may have something you can use. Get at least a 100 pound capacity scale. Use a lever to give your scale enough of an advantage to absorb about 600 pounds of thrust. Of course, you can get fancy too, and get an industrial grade scale that can handle the entire thrust load directly. If you build a scale-and-lever set-up like we've pictured here, you can see the scale from the operator's position beside the boat. The cable connecting the back of the boat to the scale must be strong enough to absorb shock loadings five times the total thrust. If you plan on a maximum thrust load of 600 pounds, then the cable must support 3000 pounds safety. We suggest 1/4" plastic-coated stainless steel cable. This will have enough strength and flexibility to work properly and will not weaken because of corrosion.

For a bow tether 3/8" or 1/2" nylon rope is good. The bow tether keeps the boat from banging against the walls during testing and from crashing backward with the water flow when the throttle is released at the end of the test run.

Finally, when you start using your test tank, experiment with the baffle so the water flows smoothly around the tank without backing up around or under the boat. Different boats and different size tanks may need different baffling, so take your time and work out the best combination for you. You may use concrete blocks as we show, for adjustability, or you may decide to use an aluminum plate with holes drilled in it. If you use concrete blocks, leave them loose. The angle irons will hold them in place.

Many personal watercraft now have the exhaust outlet on the right so you might want to set up a fan to blow the fumes away from the operator.

Any electrical equipment near water must meet special standards. Consult a professional electrician or contractor.

SECURITY AND SAFETY ARE IMPORTANT CONSIDERATIONS.

Check local ordinances for required fencing or other security devices to keep small children from falling into the tank. Thirty inches of water is a definite safety hazard to small children and pets. Keep them away from your test tank. A locking cover over the whole tank would be a good way to keep leaves and other debris out. It could also prevent an accident.

Inspect all the hardware regularly for corrosion damage. Keep everything painted and sealed for tightness and protection. You will have a lot of work invested in your test tank by the time it is finished, but it can be a valuable tool for Jet Ski® watercraft service and a real money maker. ■

INSIDE TECH SERVICES



HOT LINE News

by Joe Nowocinski,

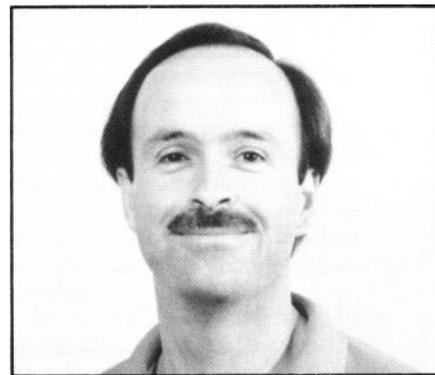
Technical Support Supervisor

We are proud to introduce our newest member of the Product Support Specialist team, John Pomo. Coming to KMC directly from a topnotch Kawasaki dealership, John brings his 20 years of technical experience to add to the Hot Line. John excels in the world of motocross, desert racing and, most recently, he placed first in CRC 4-Stroke Enduro in 1984 and finished second in CRC 200 cc Class Enduro in 1987.

Can he be of assistance to you? You bet! Just call the Kawasaki dealer assistance Hot line between the hours of 7:30 am and 3:30 pm (PT).

When calling the Hot line, the information needed from you will be: your dealer number, your first name, complete model designation, the last six digits of the frame or the middle five of the hull number, mileage (ii applicable), and failure date.

If a problem requires you to make a second call on the same unit, a log number will be given to you by the Hot line technician. When you call back, give the log number to the Hot Line technician first. Then he can recall your original file more quickly. ■—



John Pomo

New Computer System

by Gary Herzog, Product Support Manager

We have a great new computerized system that provides a more efficient, state-of-the-art means to log, store, update, access, and analyze product support related contact information.

What this means to you is that whenever you contact us, we can immediately access more information to assist you with resolution of technical, consumer or warranty situations. It also means that valuable product quality assurance information is constantly being extracted from your input so that product problems are quickly identified and resolved.

While talking to a Hot line technician, the little clicks and beeps you hear in the background are coming from their computer terminals. As you provide product or consumer information and comments, they are typing the data into the on-line, main frame computer system. The computer responds by displaying on the terminal screen related support information that can be drawn from several existing banks of data. At that time, a special notice may also appear on

their screen to alert them that a prior contact has been logged about the same customer or vehicle. They can quickly reference the previous information and continue smoothly with troubleshooting or other action that was started earlier. The new system allows Consumer Services, Team Green, Quality Assurance and Warranty Administration shared usage of the system with the Hot Line.

Warranty repair authorizations and related warranty information make up an important segment of the system. When a warranty repair is authorized, the specific unit data has been verified against existing Kawasaki records before the authorization number is given to you. That means the model, frame, job codes, and warranty period have already been verified so that necessary corrections can be made. When the claim is submitted, it will process quickly.

We are proud of our new system's capabilities. We started development of this elaborate contact logging system about 18 months ago.



Many refinements and features were considered, tested and added during the past season to perfect a system that is also "user friendly." It is just another example of Kawasaki's goal to be "number one in the way we do business." ■—

Tips from the Specialists

TEST TANK TIPS

By Kenny Osberg

1. *The purpose and usage of a JET SKI watercraft test tank are:*

- A test tank boosts the image of the dealership. This means that customers get the impression that the dealer is serious about a high level of service and the dealer is committed to the JET SKI® watercraft business.
- Measuring thrust helps diagnose engine and pump performance.
- The test tank allows simulation of real conditions. The engine can be run without using auxiliary cooling water supply.
- A test tank puts load on the engine so certain problems can be diagnosed properly (starting difficulties, high speed miss, cooling system diagnosis, etc.)
- Leakage -- water leaks can be found and repaired using a tank.
- Carburetor mixture tuning
- Performance tuning for racing - There are numerous aftermarket companies offering high-performance parts. A dealer can use a tank to demonstrate to the customer how these items can improve his JET SKI® watercraft. Actual performance increases can be measured.

2. *Key points when designing:*

- Elimination of air bubbles -- prevents cavitation.
- Water current speed control
- Overflowing/water splash
- Exhaust gas outlet -- if possible, run outside of tank (keeping water clean)
- Environment impact -- noise, exhaust gas, oil
- Easy access into tank -- water level, working platform
- Protection for boat sides and hull bottom

3. *Keypoints when testing:*

- Simulate rider weight -- place approximately 80 pound weight in tray
- Front tie rope -- kick back prevention when throttling down
- Scale for thrust
- Tachometer

ZG1200 METER REPLACEMENT

By Walter Rainwater and Randy Davis

Here are some instructions to save time if you ever need to replace a meter or gauge on a ZG1200.

Remove the meter and gauge assembly from the brackets. **You must replace the meter or gauge from the rear of the assembly.** You cannot remove the meter face plate to replace a gauge or meter. Instead, remove the rear panel by taking out all the screws on the back panel of the assembly. Leave all screws, wires and bulbs in their original position in the terminals and sockets. With the screws loose, the entire sub-harness wire will easily lift off the back of the meter case. Then, remove the original meter or gauge by cutting the shaft. The original pointer is permanently fixed on the shaft and cannot be removed.

Install the new meter or gauge. The replacement unit has a threaded shaft so the pointer can be installed with the cap and retainer. The electrical connections at the rear panel are marked so reconnecting the wires is made easy. Replace the assembly in the brackets and the job is complete.

QUICK TIPS

MODEL: JET SKI® watercraft

- SYMPTOM: Poor top end performance, new boats
- CAUSE: Silicone plugging exhaust outlet in hull
- CURE: Cut out with screwdriver or knife

MODEL: JET SKI® watercraft

- SYMPTOM: Premature ring/cylinder wear
- CAUSE: Hone finish on cylinder bore too fine
- CURE: Use 220 grit stone when finish-honing cylinder bore

Kawasaki Product Support

HOT LINE

800 954-3900
432-7093 (Ca. Only)

CONSUMER SERVICES

by Mary Sola, Senior Consumer Analyst

Consumer Services—Oh yes, the complaint department, right? Well, not always. As the only department within KMC that deals directly with the retail customer, Consumer Services handles questions about every aspect of the company: sales, service and parts. In fact, out of the 2,000 to 3,000 contacts we receive each month, about half are from people who simply need a little information (such as the location of local dealers, the part number for an H2 front tire, the quarter-mile time of the ZX10, or a brochure on the KLF300) or a little help (such as a lost owner's manual, an out-of-print snowmobile manual, or a source of parts for a 1969 A7). Most of these customers can be helped immediately or within several hours. In situations involving prices, sales, parts ordering, or technical questions other than very simple ones, customers are usually referred to a dealer.

Okay, we can take care of the simple things ourselves. That brings us back to the complaints, the problems, the unhappy customers.

We know that most consumer complaints are resolved at the dealership level, and we never hear about them. We also know that in most cases we can't solve the problems we hear about by ourselves, we need to work with you.

OUR GOAL IS TO HELP YOU MAKE AND KEEP HAPPY CUSTOMERS, ONES WHO WILL COME BACK AGAIN AND AGAIN—FOR PRODUCTS, SERVICE OR PARTS.

When a consumer lets us know of a problem, we will usually contact the dealer. After all, we need your help, we need to know what you see and what you think about a particular situation. Also, you will be making any repairs that are required. Ninety percent of our information about a customer's problem comes from the dealer involved. Your knowledge and opinion help us make the best decisions we can to keep the customers satisfied with you and Kawasaki.

New Digital Ignitions

by Waiter Rainwater & Jerry Heil

The operation of the digital igniter is similar to the TCBI igniter. TCBI stands for Transistor Controlled Breakerless ignition. It replaced the "mechanical switch" or contact breaker points systems.

The transistor in a TCBI igniter is an electric switch, a switch that is turned off and on by a small amount of electricity. In a TCBI the source for this electricity is the pickup coil.

TCBI VERSUS DIGITAL

The major difference between TCBI and digital ignition is the addition of a micro-processor in the digital igniter. The processor is placed between the pickup coil and the transistor. The processor measures crankshaft angle and speed information through the signals from the pickup coil. (See illustration, right).

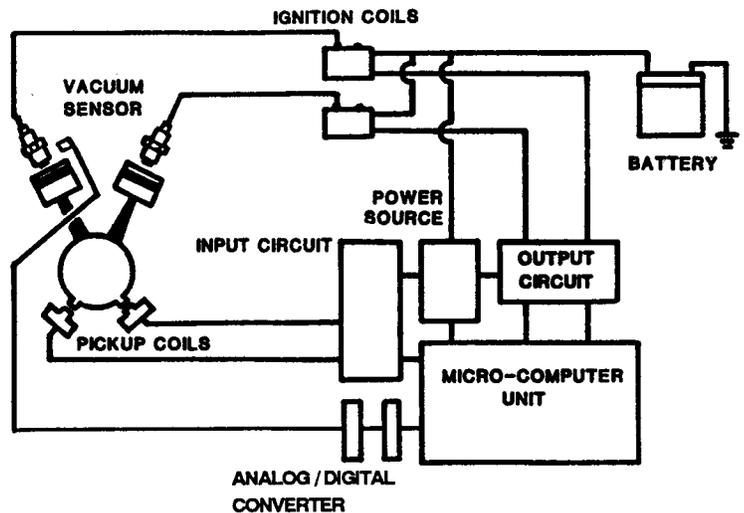
Tabs on the rotor generate signals indicating crankshaft rotation. One of the tabs is wider than the others to signal engine top dead center. The microcomputer first converts the analog pickup coil signals to digital pulses. It then measures the time between the

The pulse timing converts directly to engine speed.

The micro-processor comes from the factory with stored timing information. This stored information is called the map data. The processor then tells the transistor the best time to turn off and in turn fire the sparkplug.

The map data is a list of delay times. The delay time is the time between when the pickup coil generates its "fire" signal and when the transistor is told to turn off by the processor. The list has one delay time assigned for every 50 RPM segment of the entire range of engine RPM.

The optimum ignition timing is found in the map data by referring to the engine speed that was just measured. The optimum ignition timing map data is converted into an elapsed time from the



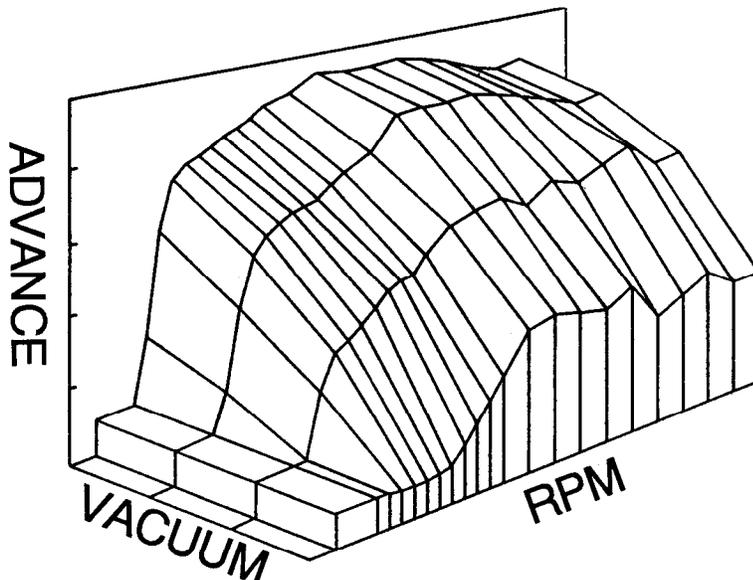
pickup coil signal. In other words, the optimum ignition timing is figured as the time from when the pickup coil signal is received and when the processor signals the transistor. This, of course, is when the coil fires the spark plug.

In addition to changing spark timing with RPM, larger displacement engines perform better if timing is changed when demand for power changes. Manifold vacuum is a measure of throttle position or "power" demand. The VN1500's digital igniter measures manifold vacuum boost and adjusts the timing advance according to vacuum map data information (see illustration, left).

The real advantage of the digital ignition system is that any advance angle characteristics may be programmed in by the factory. Advance characteristics may be as complex as needed for standard engine operation. For example, if knocking is liable to occur within certain RPM ranges, the advance contour may be set to retard the spark slightly in those ranges.

This system results in easy starting, reliable performance, great gas mileage, and low emissions. It also makes doing a tuneup quick and easy. For more details, attend the next V-Twin or Electrical Systems training class. ■

TYPICAL TIMING DATA MAP



New Accessory Cooling Fan Kit

KLF300-B2

Installation

by Mike Jeffers, Paris Publications

Whew, it's hot! It must be every bit of a 100 degrees out here. Another hour or so and we'll have this soil turned. Man, I could sure stand a cool breeze right about now.

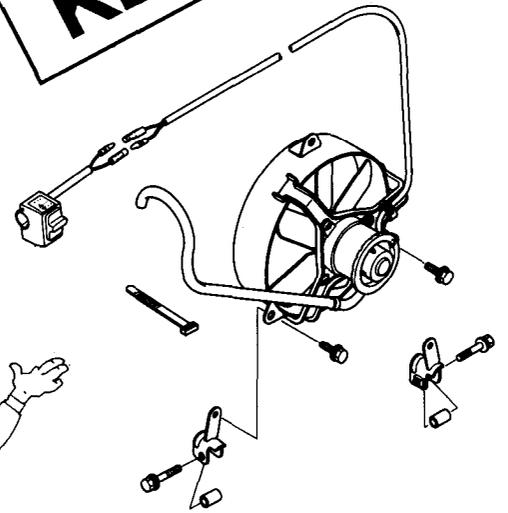
Well, Kawasaki can't supply the breeze for you, but we can for your KLF300B model BAYOU. Kawasaki is introducing an optional electric cooling fan to increase cooling air flow for hot days or heavy duty jobs. This is especially helpful during low speed operation under high temperature.

To avoid constant use and prolong fan life, the fan operates at the flick of a switch located conveniently on the handlebar. The fan clamps on right behind the upper A arm portion of the frame and is held in place by two lower clamps and one upper clamp. (NOTE: upper clamp is supported by a cross brace)

The wiring leads are run directly to the wiring harness and to the ON/OFF switch located on the handlebar.

Follow the detailed instructions included in the fan kit. (NOTE: Cooling fan diagrams can be found in the general information [1-10] section of the KLF300: BAYOU Service Manual Supplement [P/N 99924-1100-51]).

The kit is available through Kawasaki's Accessory division. Follow normal accessory ordering procedures or call the Accessory division 426-8208 (CA) or (800) 423-5726 for assistance. 



"Offer
as a special
for the month"

P/N 99995-1012

New Products

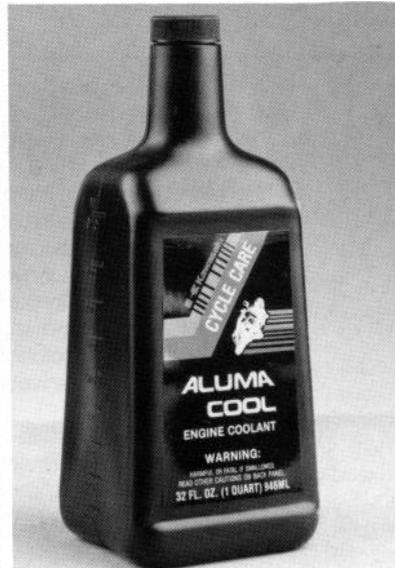
STA-BIL

When added to gasoline, Sta-Bil will prevent the formation of gum and varnish in the fuel system of stored vehicles and equipment for up to one year. Squirt the recommended amount of Sta-Bil in the fuel tank. Drain the fuel from the float chamber, then allow the treated fuel to refill the bowls. Run the engine for a short time to get the Sta-Bil through the jets in the carburetor. It is a good idea to fully service your customer's Kawasaki before storage. Consider offering a winterizing service to help boost service labor sales in the off season. Sta-Bil comes in package quantity of 1, P/N 1104.



ALUMA-COOL

A full-strength engine coolant formulated with T-Triazole for maximum corrosion protection in aluminum cooling systems. Aluma-Cool also contains foam and rust inhibitors. Designed primarily for use in aluminum engines with a cooling system operating around 15 psi, Aluma-Cool protects between minus 84° F and plus 265° F when using a 50/50 mix ratio. Packaged in quantities of 12, one quart, convenient, easy-pour bottles. P/N K61081-004.



REGIONAL NEWS

Introduction by Don Church

Please let us introduce to you the regional editors of "K-Tech News." Do they look familiar to you? Sure. Many of you know them as your regional training instructors. Take a look at their credentials. These gentlemen have a tremendous amount of knowledge to share with you about Kawasaki and the industry we are in. So, who could serve better as editors of a service-oriented publication like this?

We want you to get to know these professionals. So read on. And if you have any questions about your service business or something technical, give them a call. Or better yet, come to one of their classes.

How about some tips for "K-Tech News"? Send your tips to K-Tech News, Kawasaki Motors Corp., U.S.A., P.O. Box 25252, Santa Ana, CA 92799-5252. We really want to hear from you.

NORTH & EAST

What makes one service technician or service manager better than another? I'm sure each of us has our own ideas on this subject. Here are some of the key ingredients I came up with:

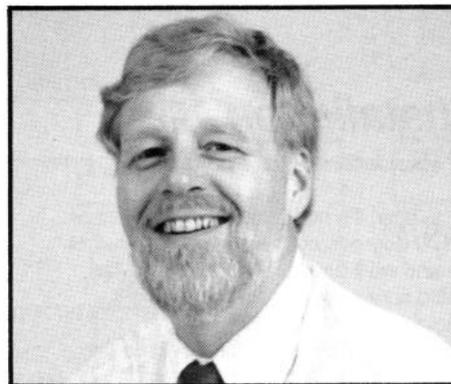
- Fast, safe, reliable work the first time around.
- Efficient diagnosis of mechanical and electrical problems.
- Up-to-date product knowledge.
- An ability to communicate with the customer.
- A working knowledge of service department operations.
- The ability to communicate with the manufacturers representatives.

- A desire to keep on learning. This last point is extremely important. The day we feel we know enough is the day we take a step backward. So take a self-check, how do you stack up? K-Tech News is just one of the tools you can use to enhance your knowledge.

Make plans to attend the service training classes starting again this October. I hope to be talking with you soon.

EXPERIENCE:

- 23 years as motorcycle mechanic
- Started with Kawasaki in 1973
- Service Training Instructor
- Hot Line Support
- Warranty Assistance ■—



Fred DeHart

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CENTRAL & SOUTH

This summer I had the opportunity to work on the Hot Line. I knew what the Hot Line responsibilities were, but I didn't know exactly what to expect because of the comments made by some students in some of my classes.

I noticed there was a lot of wasted time when a dealer did not have all the necessary information ready when he called the Hot Line. With the new Hot Line computer system, we must enter all the information before the log can be closed or any warranty authorization given.

If you are calling for warranty authorization, you should also have all

the job codes ready, as well as the claim number and parts used. Part numbers are not needed.

Occasionally, a dealer forgets that the HOT LINE is for dealers only and not for consumers. When a consumer gets on the HOT LINE, considerable time is wasted. The phone number for consumers to call is (714) 770-0400.

With a little help from you, the HOT LINE can be quicker and more beneficial to all Kawasaki dealers.

EXPERIENCE:

- Over 16 years with Kawasaki
- Service Training Instructor
- Warranty Assistance
- Hot Line Support ■—



Walter Rainwater

Office: 6110 Boat Rock Blvd. S.W.
Atlanta, GA. 30378 (464) 349-2000

WEST REGION

The demand on the dealer technician to keep up with changes in today's technology is no easy task. And, what about the new guy? The person just getting started with Kawasaki has the toughest job. Especially difficult is getting a handle on the operations of a profitable service department.

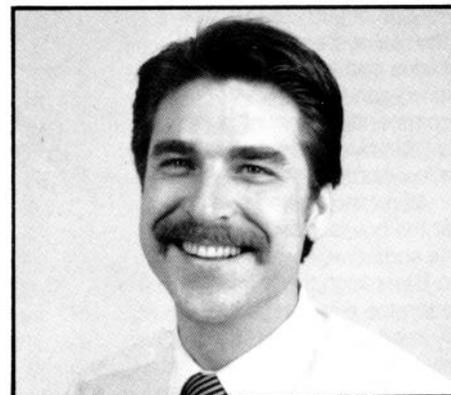
I'm reminded of my experiences teaching Service Department Operations in NDO. I have realized that dealers need a great deal more training for their service managers -the guys who actually run things on a day-to-day basis. So, I have drawn on my background as a Service Manager and other sources

within the Technical Services Department to upgrade the Service Department Operations class. After 12 weeks of intensive work on this project, we can provide you with a realistic approach to operating your service department. Not a bunch of notebooks and blank forms that bury you in paperwork.

I urge you to sign up for the upcoming Service Department Operations course. Look for the October 1988 course schedule in the weekly mailing.

EXPERIENCE:

- 20 years motorcycle mechanic
- With KMC since February 1986
- Service Training Instructor
- New Dealer Training
- Hot Line Support ■—



Ken Ploeser

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